

Introduction to Hazardous Waste Regulations Webinar Series

**Office of Environmental
Assistance**

**Office of Waste
Management and
Radiological Protection**



Introduction to Hazardous Waste Regulations Webinar Series

**Hazardous Waste Generator
Accumulation, Storage, and Labeling**



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Housekeeping

- **All lines will be muted**
- **Questions can be sent to us via the question/chat box**
- **We will record webinar and post online**
- **Notes page**

Environmental Assistance Center (EAC)

**Phone: 1-800-NO2-WASTE
(1-800-662-9278)**

**Hours: 8:00 AM to 4:30 PM
Monday – Friday**



Technical Assistance Services Include:

**Air
Waste
Water**

**Environmental Audit Privilege
Site Remediation
Permit Coordination**



Do I Need to Know All of This?

Hazardous waste regulations...

**apply to all businesses, including
municipalities, hospitals, & service
industries, not just manufacturing
industries**

**are written broadly to address hazards
posed by all waste streams**

Why Cover These Topics?

**Hazardous waste regulations
require each business to...**

**Properly label all containers of
hazardous and liquid industrial waste**

**Properly store all containers of
hazardous and liquid industrial waste
to prevent the escape of any
constituents into the environment**



Why Cover These Topics?

Proper accumulation and storage will...

- ✓ **Prevent release to the environment**
- ✓ **Prevent costly clean up expenses**

Waste Labeling and Storage

Regulations requiring waste characterization:

Act 451, Michigan Natural Resources & Environmental Protection Act:

Part 111, Hazardous Waste

Part 121, Liquid Industrial Waste

Part 115, Solid Waste

Part 169, Scrap Tires

Act 368, Michigan Public Health Code:

Part 138, Medical Waste Regulatory Act

Part 2, Ionizing Radiation Rules

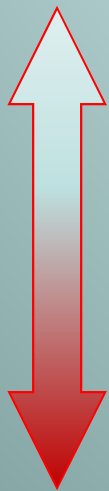
Federal Toxic Substance Control Act (TSCA)



Waste Labeling and Storage

**Requirements vary based on
waste type and amount**

Less
Regulation



Liquid Industrial Waste Generators (LIW)

Universal Waste Generators

Conditionally Exempt Small Quantity Generators (CESQGs)

Small Quantity Generators (SQGs)

Large Quantity Generators (LQGs)

**More
Regulation**



Conditionally Exempt Small Quantity Generators

Part 111, Rule 205(2)(c) –

Accumulation area must be protected from weather, fire, physical damage, and vandals.

Part 111, Rule 205(2)(d) –

Waste must be accumulated so that constituents cannot escape by gravity into soil (directly or indirectly), into surface water or ground water, into drains or sewers, or to the air in violation of Part 55.

Small Quantity Generators

Part 111, Rule 306 –

Containers must:

- Be labeled “Hazardous Waste”
- Have accumulation date (visible)
- Have hazardous waste numbers
- Be in good condition
- Be stored closed
- Be handled & stored to prevent leaks
- Be inspected weekly

Small Quantity Generators

Part 111, Rule 306 –

Containers must:

- Be compatible with the waste
- Not contain incompatible wastes
- Be separated from each other if incompatibles
- Be washed if they previously held incompatibles
- Have secondary containment if > 1000 kg (2,200 lbs) or ~ 5 drums

Large Quantity Generators

Part 111, Rule 306 –

Containers must:

- Be labeled “Hazardous Waste”
- Have accumulation date (visible)
- Have hazardous waste number(s)
- Be in good condition
- Be stored closed
- Be handled & stored to prevent leaks
- Be stored 50 feet from property line if ignitable and/or reactive (written local FD approval if <)

Large Quantity Generators

Part 111, Rule 306 –

Containers must:

- **Be inspected weekly**
- **Inspections must be documented**
- **(kept on-site 3 years)**
- **Not contain incompatible wastes**
- **Be separated from each other if holding incompatibles**
- **Be washed if previously holding incompatibles**
- **Have secondary containment**



Generator Storage/Accumulation Time Frames

SQG's

- Generate $> 220\text{lbs}$ & $< 2200\text{ lbs}$ non-acute monthly
- Accumulate not more than 13,200 lbs
- Store 180 days or less

LQG's

- Generate $\geq 2200\text{ lbs}$ non acute or $\geq 2.2\text{ lbs}$ acute or severely toxic monthly
- Store 90 days or less



Secondary Containment

Same for SQGs and LQGs

For Small Quantity Generator —

**Part 111, Rule 306(4)(b) refers
to 40 CFR 264.175**

For Large Quantity Generator —

**Part 111, Rule 306(1)(a) refers
to 40 CFR 264.175**

Secondary Containment

Same for SQGs and LQGs

**Part 111, Rule 306 & 40 CFR 264.175 –
Secondary Containment must:**

- **Have an impervious base free of cracks**
- **Be sloped or otherwise designed to elevate/protect containers from liquids**
- **Hold 10% of total container volume or volume of the largest container whichever is greater**
- **Prevent run on - unless of sufficient capacity**
- **Have accumulated liquids removed to prevent over-flow**

Satellite Containers

Same for SQGs and LQGs

Part 111, Rule 306(2) –

Must be accumulated at or near the point of generation and containers must:

- Be < 55 gallons of hazardous waste (all types/container combined)
- Be < 1 quart of acutely or severely toxic waste
- Be under the control of the operator
- Be labeled "Hazardous Waste"
- Be labeled with either the hazardous waste number(s) or chemical name

Satellite Containers

Same for SQGs and LQGs

Part 111, Rule 306(2) –

Containers must be:

- In good condition
- Compatible with the waste in them
- Closed when not in use
- Marked with date and moved to storage area within 3 days of exceeding 55 gallons non-acute or 1 quart severely/acutely toxic
- Managed to prevent leaks

Academic Laboratories

NEW RULE ADOPTED IN MICHIGAN

Part 111, Rule 313 & 40 CFR 262.200 -

- **Applies to colleges, universities, or college - university affiliated teaching hospitals and non-profit research institutes.**
- **Allows academic entities to decide when & where on-site haz waste determinations are made.**
- **Requires haz waste determinations to be made by trained professionals (not students).**
- **Requires development of a lab management plan.**
- **Requires haz waste to be removed every six months.**
- **Unused haz wastes generated during once/year lab clean-out are not counted towards generator status.**



Academic Laboratories

Comparison of Subpart K, Academic Lab Rule vs. Satellite Accumulation

www.epa.gov/wastes/hazard/generation/labwaste/saa-vs-alr.pdf

Side-by-Side Comparison: Satellite Accumulation vs. Academic Labs Rule

	Laboratories that Operate as Satellite Accumulation Areas (SAA)	Laboratories that Operate Under the Academic Laboratories Rule (Subpart K)
Regulatory Citation	• 40 CFR 262.34(c)	• 40 CFR Part 262 Subpart K
Applicability	• Any SQG or LQG may establish an SAA "at or near any point of generation"	• Any CESQG, SQG or LQG that is an eligible academic entity may opt into Subpart K • An eligible academic entity is a ◦ College or university (C/U), or ◦ Teaching hospital or non-profit research institute that is owned by or has a formal written affiliation agreement with a C/U
Terminology for regulated materials	• Hazardous waste • Acute hazardous waste	• Unwanted material • Reactive acutely hazardous unwanted material
Maximum accumulation time in lab	• No time limit, unless maximum accumulation volumes are exceeded (see below)	• Six months
Maximum accumulation volume in lab	• 55 gallons of hazardous waste • Total of 1 quart of 124 P-listed acute hazardous wastes	• 55 gallons of unwanted material • Total of 1 quart of 6 P-listed reactive acutely hazardous unwanted materials
Time allowed to exceed maximum volumes in lab	• 3 calendar days	• 10 calendar days
Container labeling in lab	• "Hazardous waste" or • "Other words that identify the contents of the container"	• "Unwanted material" or "other equally effective term," and • Information re: contents of the container, and • Sufficient information to make a hazardous waste determination, and • Accumulation start date
Hazardous waste determination	Must be made at the point of generation: • In the SAA • When the waste is first generated	Choice of where and when to make: • In the lab, before it is shipped off-site • Within 4 days of arriving at on-site Central Accumulation Area (CAA) • Within 4 days of arriving at on-site TSD

This chart is a summary of federal regulations and is not intended to be exhaustive.

Prepared by EPA, July 2009



Liquid Industrial Waste

NO LABELING REQUIREMENTS

Part 121, Section 12113(1) –

All vehicles, containers & tanks must be closed or covered (except when adding or removing waste) to prevent escape of LIW. Exteriors of vehicles, containers and tanks must be kept free of LIW and its residues.

Part 121, Section 12113(2) –

Liquid industrial waste must be managed to prevent discharge into soil, surface water or groundwater, drain or sewer.

Used Oil

Part 111, Rule 810 –

Used oil must be:

- **Labeled “USED OIL” if stored in a container or above ground storage tank**
- **Have fill pipes used to transfer used oil labeled “USED OIL”**
- **Only stored in containers or tanks**
- **Stored in containers in good condition with no visible signs of leaks**

Used Oil



Universal Waste Antifreeze

Part 111, Rule 228(4) –

Containers must be:

- **Labeled “UNIVERSAL WASTE ANTIFREEZE” or “WASTE ANTIFREEZE” or “USED ANTIFREEZE”**
- **Kept closed**
- **Structurally sound & compatible with the contents**
- **Managed to prevent leaks or releases to environment**



Universal Waste Batteries

Part 111, Rule 228(4) –

Containers must be:

- Labeled “UNIVERSAL WASTE BATTERIES” or “WASTE BATTERIES” or “USED BATTERIES”
- Kept closed
- Structurally sound & compatible with the contents
- Managed to prevent leaks or releases to environment

Universal Waste Consumer Electronics

Part 111, Rule 228(4) –

Packaging must be:

- **Labeled “UNIVERSAL WASTE
CONSUMER ELECTRONICS” or
“UNIVERSAL WASTE ELECTRONICS”**
- **Managed to prevent breakage during
normal handling conditions**

Universal Waste Electric Lamps

Part 111, Rule 228 (4) –

Containers must be:

- Labeled “UNIVERSAL WASTE ~~ELECTRIC~~ LAMPS” OR “WASTE ~~ELECTRIC~~ LAMPS” OR “USED ~~ELECTRIC~~ LAMPS” (**RULE CHANGE!!**)
- Structurally sound and compatible with contents of lamps
- Prevent breakage
- Kept closed

Universal Waste Mercury Devices

Part 111, Rule 228(4) –

Containers must be:

- Labeled “UNIVERSAL WASTE THERMOSTATS” or “WASTE MERCURY THERMOSTATS” or “USED MERCURY THERMOSTATS”
- Structurally sound, compatible with contents of device with no evidence of leakage or spillage
- Designed to prevent the escape of mercury

Universal Waste Pharmaceuticals

Part 111, Rule 228 (4) –

Must be managed to prevent release of any universal waste and packaging must be:

- **Structurally sound and is compatible with contents**
- **Will prevent breakage**
- **Kept closed**

Universal Waste Pesticides

Part 111, Rule 228 (4) –

Containers must be:

- Labeled “UNIVERSAL WASTE PESTICIDES” or “WASTE PESTICIDES”
- Structurally sound and compatible with contents
- Free of evidence of leakage, spillage or damage
- Kept closed

Tanks

SQG & LQG

Part 111, Rule 306 & 40 CFR 265
Subparts J & I –

Tanks must:

- **Be labeled “HAZARDOUS WASTE”.**
- **Be marked with accumulation date.**
- **Not contain wastes which could cause rupture, leaks, corrosion or other failures**
- **Be managed to prevent reactions that would threaten human health and the environment**
- **Be decontaminated (washed) if they previously held incompatible waste before adding waste**



Tanks

Ignitable and Reactive Wastes

Part 111, Rule 306 & 40 CFR
265.198

Ignitable and reactive wastes must be:

- Treated /mixed so that resulting mixture is no longer ignitable or reactive and does not cause structural damage to the tank
- Stored/treated so it is protected from igniting or reacting ***NOTE: Generator must observe the National Fire Protection Association's buffer zone for tanks with ignitable or reactive wastes.***

Tanks

Controls and Practices to Prevent Spills and Overflows

Part 111, Rule 306 & 40 CFR 265.194 –

Tanks must:

**Have spill prevention controls, overfill
prevention controls**

Uncovered tanks must:

**Have at least 2 feet of freeboard unless
equipped with containment structure or
with a drainage or diversion system.**



Tanks

Secondary Containment

Part 111, Rule 615 & 40 CFR 265.193 –

Above Ground Tanks must:

- **Be paved, diked, or curbed or otherwise enclosed to contain not less than 100% of the largest tank**
- **Have 100% containment for each tank if waste is incompatible or the tanks are interconnected**

Tanks

Secondary Containment

Part 111, Rule 615 & 40 CFR 265.193 –

Under Ground Tanks must:

- **Have secondary containment and a leachate withdrawal system**
- **Have a complete inventory of wastes done not less than twice a month**
- **Have leachate sampled at least annually**

Tanks

Secondary Containment

Part 111, Rule 306 & 40 CFR 265.193 –

Secondary Containment must:

- **Be constructed of compatible material with sufficient strength**
- **Have an adequate foundation**
- **Have leak detection system which is able to detect leaks within 24 hours or earliest practical time**
- **Be sloped and/or drained so that all liquid is removed within 24 hours or earliest practical time**



Tanks

Secondary Containment

**Part 111, Rule 306 & 40 CFR 265.193 –
Secondary Containment must include
either:**

- **A liner**
- **A vault system**
- **Or a double walled tank**

**Ancillary equipment requires full secondary
containment also!!!**

Tanks

Secondary Containment

Part 111, Rule 306 & 40 CFR 265.193 –

Secondary Containment Liner must:

- **Have a 100% capacity of the largest tank**
- **Prevent run-on or infiltration of precipitation unless has excess capacity**
- **Be free of cracks or gaps**

Tanks

Secondary Containment

**Part 111, Rule 306 & 40 CFR 265.193 –
Secondary Containment Liner must:**

- **Must cover any area that waste may come in contact with if released**
- **Be constructed with chemical resistant stops if cement**
- **Have an impermeable, compatible interior coating if cement**

Tanks

Secondary Containment

Part 111, Rule 306 & 40 CFR 265.193 –

Vault System must:

- **Have 100% capacity of the largest tank within its boundary**
- **Prevent run-on or infiltration of precipitation**
- **Be constructed with chemical resistant water stops in all joints**

Tanks

Secondary Containment

**Part 111, Rule 306 & 40 CFR 265.193 –
Vault System must:**

- **Have a compatible impermeable interior coating**
- **Provide against vapor formation & ignition if storing ignitable or reactive waste**
- **Have an exterior moisture barrier**

Tanks

Inspection Requirements

Part 111, Rule 306(1) & 40 CFR 265.195

Inspect each day (if present) or weekly if leaks are determined promptly either through detection systems or work practice (must be documented in facility operating record:

- **Discharge, overflow/spill control equipment**
- **Monitoring equipment data**
- **Above ground portion of tank system (e.g., materials and area around tank)**

Tanks

Inspection Requirements

Part 111, Rule 306(1) & 40 CFR 265.195

Inspect Cathodic Protection for in ground tanks (if present):

- **Within six months after initial installation, annually after that**
- **Impressed current at least bimonthly**

Tanks

Inspection Records

**All tank inspections must be documented
and all documents must be kept
for at least 3 years.**

Tanks Certification

Part 111, Rule 306 & 40 CFR 265.192 –

Must obtain a written assessment that is reviewed and certified by a qualified professional engineer that includes:

- **Design standards**
- **Hazard characteristics of the waste**
- **Determination performed by corrosion expert if the external shell of a metal tank is in contact with soil or water**
- **Design considerations if tank affected by vehicles**

Tanks Certification

**Professional engineer
written certification must be kept
on file AT FACILITY.**



Subpart CC Rules

What Are They?

EPA Rules for controlling certain air emissions

Part 111, Rule 306 (1) and Rule 634 adopts by reference 40 CFR Part 264, Subpart CC

Certain LQGs and Treatment, Storage, and Disposal Facilities (TSDFs) are subject to one of 3 different sets of requirements for containers under Subpart CC



Subpart CC Rules

What Are They?

**Part 111, Rules 306(1) & 634; & 40 CFR
264 & 265, Subpart CC -**

Container/Tank requirements depend on:

- **the size of container**
- **the organic content of the waste placed in the container**
- **whether or not waste stabilization occurs in container**

Subpart CC Rules

TSDFs as well as certain LQGs must comply with Subpart CC if they:

- **generate a hazardous waste which has an average volatile organic (VO) concentration \geq 500 parts per million by weight (ppmw) at the point of waste origination and**
- **it is stored in containers larger than ~ 26 gallons.**

SQGs are exempt from Subpart CC



Subpart CC Rules Exemptions

Exemptions:

- **Wastewater treatment units**
- **Elementary neutralization units**
- **Emergency or spill management units**
- **Waste recycling units**
- **Satellite accumulation units**
- **RCRA empty containers**
- **If organic content is reduced prior to waste being placed in container**

Subpart CC Rules Exemptions

Hazardous waste < 500 ppmw

Records to be kept:

- **Test Results**
- **Date, time, and location of sampling for EACH hazardous waste**
- **Measurements**
- **Calculations**
- **Other documentation**

Subpart CC Rules Exemptions

Records documenting the rationale for the exemption must be reviewed and updated, when necessary, and at least once every twelve months. These records must be maintained on site.

Subpart CC Rules

Definitions

40 CFR 265.1081 – “LIGHT LIQUID SERVICE” means:

Vapor pressure of one or more of the organic constituents is > 0.3 kilopascals at 20 degrees Celsius and the total concentration of organic constituents is equal to or greater than 20 percent by weight.

Subpart CC Rules

Container Defined

Level 1 –

26 to 122 gallon capacity in light liquid service

Level 2 –

>122 gallon capacity in light liquid service

Level 3 –

Waste stabilization unit



Subpart CC Rules

Container Requirements

Level 1 – 40 CFR 265.1087(c)

DOT Approved

Covers and closure devices for all openings

Open top with organic vapor suppressing barrier

Level 2 – 40 CFR 265.1087(d)

DOT approved

Vapor tight or operated with no detectable emissions

Level 3 – 40 CFR 265.1087(e)

**Vented (or located in enclosure that is vented)
through closed vent system to a control device**



Subpart CC Rules

Tank Defined

LEVEL 1 Tank, per 40 CFR 264.1084, is:

- **< 20,000 gal with Vapor Pressure < 11.1 psi**
- **20,000 – 40,000 gal with Vapor Pressure < 4 psi**
- **> 40,000 gal with Vapor Pressure < .75 psi**
- **Not used to heat hazardous waste**
- **Not used as a waste stabilization unit**

Subpart CC Rules

Tank Requirements

LEVEL 1 Tanks per 40 CFR 265.1084(c)
must:

- **Have fixed roof**
- **Have any and all openings in roof equipped with closure device or connected by a closed vent system that is vented to a control device.**
- **Have initial inspection and then once each year thereafter (some exceptions to this)**



Subpart CC Rules

Tank Defined

LEVEL 2 Tank, per 40 CFR 264.1084, is:

- **< 20,000 gal with Vapor Pressure > 11.1 psi**
- **20,000 – 40,000 gal with Vapor Pressure > 4 psi**
- **> 40,000 gal with Vapor Pressure > .75 psi**
- **Used to heat hazardous waste**
- **Used as a waste stabilization unit**

Subpart CC Rules

Tank Requirements

LEVEL 2 Tanks per 40 CFR 265.1085(d) must:

- **Have an external floating roof or**
- **Have an internal floating roof if fixed-roof or**
- **Vent to control device or**
- **Be a pressure tank or**
- **Vent to an enclosed combustion device**

Subpart CC Rules

Tank Requirements

All tanks subject to Subpart CC control requirements must be inspected.

Inspection procedures and requirements vary by type of tank.

Records of all inspections regardless of the tank control level must be kept at the facility for a minimum of 3 years after the date of the inspection.

More detailed record keeping and inspection requirements are required for floating roof tanks and tanks or enclosures which vent to a control device.



Closed Container

What Is It?

Regulations do not define “closed container.”

Requiring containers to be closed is a means to minimize emissions of volatile wastes, to protect ignitable or reactive wastes from sources of ignition or reaction, to prevent spills, to reduce the potential for mixing of incompatible wastes and reduce direct contact of personnel with waste.

Closed Container Liquid Hazardous Waste

For containers in storage:

- **Cover secured with snap rings bolted**
- **Bungholes capped**
- **If needed, pressure-vacuum relief valve to avoid explosions**

For containers in satellite accumulation:

- **Lids properly affixed to prevent spills**
- **Funnels with manual or spring-loaded lids or tightly screwed into bung hole with a one-way valve**

Closed Container Solid Hazardous Waste

Container is closed if there is complete contact between the lid and the rim all around the top of the container.

If continuously receiving wastes, containers should be capable of catching and retaining all of the material.

MDEQ Hazardous Waste Generator Webinar - Self Certification

MDEQ Hazardous Waste Generator Webinar Trainer - Self Certification	
I, _____ <small>Print signatory's name here</small>	
certify that I have viewed the entirety of the Michigan Department of Environmental Quality (MDEQ), Hazardous Waste Webinars listed below, for which I am a signatory, to gain a general understanding of the hazardous waste generator requirements under Part 111, Hazardous Waste Management, of the Michigan Natural Resources and Environmental Protection Act, Act 451 of 1994, as amended, and the rules promulgated thereunder. I further certify that I recognize that this information is general and it is essential for me to evaluate the need for additional site-specific training as part of a site-specific hazardous waste training program. I recognize that additional site-specific training is necessary to develop such a hazardous waste program for my facility and for me to be qualified to provide such training to on-site personnel to perform daily duties related to the generation and management of hazardous waste.	
Introduction to Hazardous Waste Regulations: Waste Characterization and Generator Status	
Signature _____	Date Training Viewed _____
Introduction to Hazardous Waste Regulations: Hazardous Waste Generator Accumulation, Storage, and Labeling Requirements	
Signature _____	Date Training Viewed _____
Introduction to Hazardous Waste Regulations: Hazardous Waste Generator Recordkeeping & Inspection	
Signature _____	Date Training Viewed _____

April 10, 2012



Questions

**Feel free to ask questions via your
question/chat box**

Upcoming Events

- **Jan. 16** – MAERS Review Webinar
- **Jan. 21** Hazardous Waste Generator Recordkeeping, Reporting, & Inspection Webinar
- **Jan-Feb** – MAERS and SARA Workshops
- **March 18 & 20** – Fugitive Dust Workshops
- **May 8-9** – Green Infrastructure Conference
- **May-June** – Michigan Environmental Compliance Conference



www.michigan.gov/deqworkshops

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